
संशोधक तरल — विशिष्टि
(दूसरा पुनरीक्षण)

Correcting Fluid — Specification
(*Second Revision*)

ICS 87.080

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FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Printing Inks, Stationery and Allied Product Sectional Committee had been approved by the Chemical Division Council.

This standard was originally published in 1967 and subsequently revised in 1981. Experience gained by manufacturers and users while implementing this standard, has necessitated its first revision. In this revision, the requirements and methods of test for drying properties and film properties have been added and the limit for soluble solids has been amended.

This standard has been revised with the aim of updating the standard and also to take into consideration the technical advancements that would have taken place since the publication of this standard.

Correcting fluid covered in this standard is used for application with a brush on wax less stencil papers used for various types of duplicators for the purpose of carrying out corrections in hand-written or typewritten matter.

For the purpose of deciding whether a particular requirement of this standard is complied with the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

CORRECTING FLUID — SPECIFICATION

(*Second Revision*)

1 SCOPE

This standard specifies the requirements and the methods of sampling and test for correcting fluid used for carrying out corrections on wax less stencil papers.

2 REFERENCES

The standards given below contain provisions which, through reference in this text, constitute provisions of this standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
4395 : 1987	Glossary of terms related to ink and allied industries
4905 : 2015/ ISO 24153 : 2009	Random sampling and randomization procedures (<i>first revision</i>)

3 TERMINOLOGY

For the purpose of this standard, the definitions given in IS 4395 shall apply.

4 REQUIREMENTS

4.1 Description

The material shall be white or tinted to make it visible where it has been applied. It shall adhere perfectly to the stencil paper and shall not show any strike-through nor it shall have any smearing effect.

NOTE — Use of toxic and health hazard solvent/chemicals be restricted in correcting fluid as far as possible.

4.2 Sediment

The material shall show no sediments or deposits either at the bottom or on the sides of the container when kept in a closed container.

4.3 Clarity

The material shall be a clear solution and, when applied evenly on a stencil paper on about 2 cm² area and examined against a lighted background, shall show no streak or hard particles or dots on the surface after it is allowed to dry completely.

4.4 Flow

The material shall flow freely from the brush and shall not clog the bristles of the brush, nor it shall drop as a blob while holding the brush in an upright position.

4.5 Thickening and Decomposition

The material shall not appreciably thicken when kept in a closed air-tight container and shall not have any change nor shall show any sign of decomposition.

4.6 Soluble Solids

The material shall contain soluble solids not less than 7 percent by mass when tested as prescribed in Annex A.

4.7 Drying Time

The material shall dry completely in 45 s after it is applied to stencil paper and shall pass the test prescribed in Annex B.

4.8 Film Properties

The dried film of the material shall have good flexible properties and shall pass the requirements of the test prescribed in Annex C.

4.9 Performance

The material shall satisfy the test for performance as prescribed in Annex D.

5 PACKING AND MARKING

5.1 Packing

The material shall be packed in glass containers provided with air-tight caps which shall not be affected by the material. Each glass container shall be furnished with a brush securely fixed to the cap so as to reach near the bottom of the phial. Each container shall be packed in a suitable carton so as to prevent breakage in handling and transit.

5.2 Marking

5.2.1 Each container and carton shall be marked with the following information:

- a) Name of the material;
- b) Manufacturer's name and/or recognized trade-mark, if any;
- c) Identification mark, in code or otherwise, to enable the batch of manufacture to be traced from records;

- d) Month and year of manufacture;
- e) Directions for use;
- f) A note of caution after use, to keep the bottle firmly closed and to store in a cool place;
- g) A cautionary notice should clearly state the nature of hazard due to use of solvent in the product like highly flammable and toxic, health hazard and skin irritant etc in view of the solvent being used in the fluid (*see* note 1); and
- h) A cautionary information regarding “Keep out of reach of Children” should also be marked (*see* note 2).

NOTES

1) Solvents used in correcting fluids are generally organic compounds and may be either of Toluene, 1,1,1-trichloroethane, trichloroethylene or bromopropane. Toluene is a highly flammable organic compound as well as toxic in nature. 1,1,1-trichloroethane is skin irritant and widely banned though less flammable than Toluene but a potential ozone depleting agent. Trichloroethylene is also not completely safe to human health but a potential ozone depleting agent. Bromopropane though less toxic (specific to some aspects) but not poisonous.

2) Since fluid contains toxic organic solvent, such cautionary information should also be marked.

5.2.2 BIS Certification Marking

The containers may also be marked with the Standard Mark.

5.2.2.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act, 2016* and Rules and Regulations made thereunder. The details of the conditions under which a licence for use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

6 SAMPLING

The method of drawing representative samples of the material and the criteria for conformity of the material to the requirements of the standard shall be as prescribed in Annex E.

ANNEX A

(Clause 4.6)

DETERMINATION OF SOLUBLE SOLIDS**A-1 PROCEDURE**

Weigh accurately about 5 g of the material in a clean, dry and tared porcelain dish. Evaporate the material on a hot water bath at 80°C to 85°C till the material forms a uniform thin film at the bottom of the dish. Take care to avoid any loss of contents. Continue heating on the water-bath till the material is apparently dry. Place the dish and contents in an air-oven maintained at 105° ± 2°C for about one h. Cool the dish in a desiccator and weigh. Repeat the operation till constant mass is obtained.

A-2 CALCULATION

Total solids,

$$\text{percent by mass} = 1000 \times \frac{(M_2 - M_1)}{M}$$

where,

M_2 = mass in g, of the residue and the dish;

M_1 = tare in g, of the empty dish; and

M = mass in g, of the material taken for the test.

ANNEX B

(Clause 4.7)

TEST FOR DRYING TIME**B-1 PROCEDURE**

B-1.1 Dip the bottom of a glass test tube (about 75 mm × 9 mm in size) to a depth of 2.5 cm into the correcting fluid. Remove and suspend the tube in a vertical position. Examine the upper-half of the film at the end

of 45 s. The test shall be carried out at 22° to 27°C and a relative humidity of 50 to 65 percent.

B-1.2 The material shall be considered to have passed the requirement of the test if the film has dried in 45 s without tackiness or chalking.

ANNEX C

(Clause 4.8)

TEST FOR FILM PROPERTIES**C-1 PROCEDURE**

C-1.1 Dip the bottom of a glass test tube (about 75 mm × 9 mm size) to a depth of 2.5 cm into the correcting fluid. Remove and suspend the tube for 2 h. The test shall be carried at 22° to 27°C and a relative humidity of 50 to 65 percent.

C-1.1 The material shall be considered satisfactory if the film is capable of being shaved from the glass tube, using a razor blade; and the shavings have good flexible properties without crumbling.

ANNEX D

(Clause 4.9)

TEST FOR PERFORMANCE**D-1 PROCEDURE**

D-1.1 Type out 20 letters on a stencil paper in the usual manner. Burnish gently on these typed letters with the dome of the thumb nail or a glass rod so as to close

the perforations. Lift the stencil free of carbon paper or backing sheet by means of a pencil or ruler and apply the material evenly on the typed matter (single application) if two applications are necessary then the first coating should be allowed to dry. Allow the material to dry for

one minute and then retype with light touch. Observe the printing of the stencil on the duplicating machine.

D-1.2 The material shall conform to the requirements of the test if the printed letters show no noticeable non-uniformity, distortion or blots.

ANNEX E

(Clause 6.1)

SAMPLING OF CORRECTING FLUID

E-1 GENERAL REQUIREMENTS OF SAMPLING

In drawing, preparing, storing, and handling test samples, the following precautions and directions shall be observed.

E-1.1 Samples shall be taken in covered area.

E-1.2 The sampling instrument shall be clean and dry, when used.

E-1.3 Precautions shall be taken to protect the samples, the material being sampled, the sampling instrument and the containers for samples from adventitious contamination.

E-1.4 To draw a representative sample, the contents of each container selected for sampling shall be thoroughly mixed.

E-1.5 The samples shall be filled in clean, dry, air-tight glass containers on which the material has no action.

E-1.6 The sample containers shall be of such size that they are almost completely filled by the sample.

E-1.7 Each sample container shall be sealed airtight with a stopper after filling and marked with full particulars of the material as given in 5.2 and the date of sampling.

E-1.8 The sample shall be stored in such a manner that the temperature of the material does not vary unduly from the normal temperature.

E-2 SCALE OF SAMPLING

E-2.1 Lot

All the phials from the same batch of manufacture shall be grouped together to constitute a lot.

E-2.2 The samples shall be tested from each lot separately for ascertaining the conformity of the material to the requirements of this specification.

E-2.3 The number of phials to be selected for sampling (n) shall depend upon the number of phials in the lot (N) and shall be in accordance with col 1 and 2 of Table 1.

E-2.4 The containers shall be selected at random from the lot. To ensure the randomness of selection, random number table shall be used. For guidance in random selection procedures, IS 4905 may be used. In case such a table is not available, the following procedure shall be employed:

Starting from any phials, count them as 1, 2, 3, up to r and so on in one order, where r is equal to the integral part of N/n , N being the number of phials in the lot and n the number of phials to be selected (*see* Table 1). Every r^{th} phial thus counted shall be withdrawn to give the requisite number of phials for the sample.

Table 1 Number of Phials to be Selected for Sampling

Sl. No.	No. of Phials in the Lot	No. of Phials to be Selected
	N	n
(1)	(2)	(3)
i)	Up to 15	2
ii)	16 to 50	3
iii)	51 to 150	5
iv)	151 and above	8

E-3 TEST FOR SAMPLES AND REFEREE SAMPLES

E-3.1 Before drawing the samples, the material in the phials chosen (*see E-2.3*) shall be thoroughly mixed by shaking, stirring or rolling. The samples shall then be drawn with the help of a suitable sampling instrument.

E-3.2 From each of the phials three test samples shall be drawn, the volume of each being sufficient for conducting all the tests specified in 4. All the test samples thus obtained shall be transferred to sample containers (*see E-1.6*) and marked with all the details of sampling (*see E-1.3*). These samples shall then be separated into three identical sets of test samples in such a way that each set has a test sample representing each phial selected (*see E-2.3*). One of these three sets shall be for the purchaser, another for the supplier and the third for the referee.

E-3.3 Referee Sample

The referee sample shall consist of the set of test samples (*see E-3.2*) marked for this purpose and shall bear the seals of both the purchaser and the supplier and shall be kept at a place agreed to between the two.

E-4 NUMBER OF TESTS

Tests for all the requirements of the specification given in 4 shall be conducted on each of the samples in a set.

E-5 CRITERIA FOR CONFORMITY

A lot shall be declared as conforming to the requirements of this specification if each of the test results satisfies the relevant requirements of the specification individually.

Bureau of Indian Standards

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